UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,029	09/18/2003	Merwin H. Alferness	ROC920030085US1	9131

30206	7590	09/14/2006		EXAMINER

IBM CORPORATION
ROCHESTER IP LAW DEPT. 917
3605 HIGHWAY 52 NORTH
ROCHESTER, MN 55901-7829

NGUYEN, TANH Q

ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/667,029	ALFERNESS ET AL.
	Examiner	Art Unit	
	Tanh Q. Nguyen	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 June 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-23</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>18 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-3, 5, 9, 11; 12-14, 16, 20, 22; 23 are rejected under 35 U.S.C. 102(e) as

being anticipated by Kawakami et al. (US 6,560,231).

3.   <u>As per claim 1</u>, Kawakami teaches a method [FIG. 11, FIG. 12] of self-adjusting

allocation of memory bandwidth in a network processor system comprising:

determining an amount of memory bandwidth of a network processor used by

each of a plurality of data types [S706, FIG. 11; col. 7, lines 45-51]; and

dynamically adjusting the amount of memory bandwidth allocated to at least one

of the plurality of data types based on the determination [S710-S708, FIG. 11; col. 7,

lines 51-57; establishing a connection resulting in B1 → B'1, and dynamically adjusting

the amount of memory bandwidth allocated to the plurality of data types to X'1-X'm,

FIG. 12].

4.   <u>As per claims 2-3, 5</u>, Kawakami teaches a total amount of memory bandwidth of

the network processor used by the plurality of data types being configurable [available

bandwidth of transmission path used by the plurality of data types being configured to

X'1-X'm after establishing connection]; determining whether memory bandwidth may be allocated to at least one of the plurality of data types [S704, S706, FIG. 11] including determining whether a port for transmitting data of at least one of the plurality data types may be activated [a connection may be established at S708, and a connection being inhibited at S712, FIG. 11].

5.   As per claims 9, 11, Kawakami teaches the plurality of data types including an ATM protocol data type [col. 3, lines 39-53]; and dynamically adjusting the amount of memory bandwidth allocated to at least one of the plurality of data types based on the determination including at least one of dynamically activating and deactivating a port for transmitting data of at least one of the plurality of data types [S708, FIG. 11; col. 9, lines 27-29].

6.   As per claims 12-14, 16, 20, 22, Kawakami teaches an apparatus [FIGs. 3-5] comprising a port activation logic [150, 250] adapted to couple to a memory of a network processor and to interact with the memory [col. 3, line 66-col. 4, line 67] and limitations that generally correspond to the limitations recited in claims 1-3, 5, 9 and 11 (see rejections of claims 1-3, 5, 9, 11 above).

7.   As per claim 23, Kawakami teaches a network processor system [FIGs. 3-5] comprising a memory [buffers] and a network processor coupled to the memory, the network processor comprising a memory controller [extracting block], a plurality of ports [input connections], and a port activation logic [bandwidth managing controller] coupled to the memory controller, the plurality of ports and the memory, and adapted to interact with the memory and limitations that generally correspond to the limitations recited in

claim 1 (see rejections of claim 1 above).

8.   Claims 6-7, 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sourani et al. (US 6,549,515).

9.   As per claims 6-7, Sourani teaches a method of self-adjusting allocation of memory bandwidth in a network processor system comprising:

determining an amount of memory bandwidth of a network processor used by each of a plurality of data types including determining a number of active ports of the network processor used to transmit data of each of the plurality of data types and determining an amount of memory bandwidth allocated to each active port for each of the plurality of data types [establishing a network instantaneous demand for bandwidth by calculating the total number of bits required for the operative algorithms (data types) in all the active channels [col. 2, lines 43-49]]; and

dynamically adjusting the amount of memory bandwidth allocated to at least one of the plurality of data types based on the determination [col. 2, lines 50-62].

Sourani further teaches the amount of memory bandwidth allocated to each active port for a data type being the same [active channels with same operative algorithm are allocated same amount of bandwidth].

10.   As per claims 17-18, see the rejections of claims 6-7 above.

11.   Claims 1-3, 6-9, 11; 12-14, 17-20, 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Alferness et al. (US 2004/0017781).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131.

Alferness teaches in [0040]-[0043] determining an amount of memory bandwidth

used by each of the plurality of data types [determining received bandwidth for each

virtual channel] and dynamically adjusting the amount of memory bandwidth allocated to

at least one of the plurality of the data types based on the determination [if two channels

are active, each would receive their nominal bandwidth; if one channel is active, it would

receive the entire bandwidth of the path];

the total amount of memory bandwidth for the virtual path being set up [i.e.

configured] to have an average bandwidth of 1Mbps;

determining whether memory bandwidth may be allocated to one of the plurality

of data types [when only one channel is active, it is determined that the excess

bandwidth may be allocated to allow this channel to have the full bandwidth of the

virtual data path];

determining a number of active ports and determining an amount of bandwidth

allocated to each active port [if two channels are active, each would receive their

nominal bandwidth; if one channel is active, it would receive the entire bandwidth of the

path];

the amount of memory bandwidth allocated to each active port being the same

[0.5 Mbps when two channels are active];

the bandwidth allocated to each active port being configurable [when only one channel is active, the bandwidth allocated for the port is scaled up to 1Mbps] and the data type being ATM data type [[0071], lines 6-8];

dynamically activating and deactivating a port [scaling up of bandwidth when virtual path is undersubscribed and scaling down of bandwidth when virtual path is oversubscribed].

Claim Rejections - 35 USC § 103

12.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13.   This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14.   Claims 4, 10, 15, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kawakami et al.

15.   As per claims 4, 15, Kawakami does not specifically teach determining whether memory bandwidth may be allocated to at least one of the plurality of data types includes determining a difference between a maximum amount of memory bandwidth of the network processor that may be used by the plurality of data types and the total amount of memory bandwidth of the network processor currently used by the plurality of data types.

Kawakami teaches determining whether the total required bandwidth ≤available bandwidth of the transmission path [S706, FIG. 11; col. 7, lines 51-54], hence determining whether the maximum amount of bandwidth ≥the total amount of bandwidth used. Since (the maximum amount of bandwidth ≥the total amount of bandwidth used) can be rearranged mathematically to ([the maximum amount of bandwidth - the total amount of bandwidth used] ≥0), it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine whether memory bandwidth may be allocated to at least one of the plurality of data types by determining whether ([the maximum amount of bandwidth - the total amount of bandwidth used] ≥0), as an alternative to determining whether (the maximum amount of bandwidth ≥the total amount of bandwidth) since they are mathematically equivalent and since the invention would perform equally well using either one of the expressions.

16.   As per claims 10, 21, Kawakami does not teach the plurality of data types including an Ethernet protocol data type, wherein the Ethernet protocol data type includes at least one of a Gigabit Ethernet data type and a Fast Ethernet data type.

Since it was known in the art at the time the invention was made for Ethernet

frames to ride within ATM cells to allow Ethernet frames to be transferred through an

ATM medium, and since it was known in the art for Ethernet protocol to include a

Gigabit Ethernet protocol for demanding applications, it would have been obvious to one

of ordinary skill in the art at the time the invention was made for the plurality of data

types to include an Ethernet protocol data type in order to transfer Ethernet frames with

ATM cells, and for the Ethernet protocol to include a Gigabit Ethernet protocol in order

to accommodate demanding applications.

17.   Claims 8, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sourani et al..

Sourani teaches memory bandwidth allocated to each active port being

configurable [col. 2, lines 53-63], but does not teach an ATM protocol data type.

Sourani, however, teaches algorithms for FAX, ADPCM.

Since it was known in the art to use ATM to transport FAX, and for converted

ADPCM traffic to be inserted into an ATM stream, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to use ATM protocol data

type in order to transport data of different types [i.e. Fax, ADPCM].

Response to Arguments

18.   Applicant's arguments filed June 21, 2006 have been fully considered but they

are not persuasive.

19.   With respect to Kawakami, applicant asserted that applicant's disclosure

provides support for data types to be ATM, Fast Ethernet and/or Gigabit Ethernet, argued that the Office Action asserted that "Kawakami teaches the plurality of data types including an ATM protocol data type" in the rejection of claims 9 and 11, and concluded that the examiner incorrectly stated that ATM is one data type among others described in Kawakami by further submitting that Kawakami merely discloses "ATM transmission, and more particularly to a bandwidth control method in the ATM transmission that can fulfill required service qualities in the transmission" - and consequently Kawakami cannot disclose "determining an amount of memory bandwidth of a network processor used by each of a plurality of data types" as recited in claim 1.

The argument with respect to Kawakami and claim 1 is misplaced and not persuasive because the examiner considers ATM of one service quality being of one data type, and ATM of another service quality being another data type.

The argument with respect to the rejections of claims 9 and 11 is also misplaced and not persuasive because claim 9 merely recites "wherein the plurality of data types include at least one of an ATM protocol data type and an Ethernet protocol data type" - therefore does not preclude the plurality of data types including one data type being an ATM protocol data type with one service quality and another data type being an ATM protocol data type with another service quality, and because claim 11 is not relevant to applicant's argument.

The argument with respect to the data types of applicant's invention being ATM, Fast Ethernet, and/or Gigabit Ethernet is not persuasive because it is noted that such features are not recited in the rejected claim(s). Although the claims are interpreted in

light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

20.   With respect to Sourani, it appears that applicant argued that Sourani teaches

bandwidth related to a telecommunications network and not (storage) memory

bandwidth.

The argument is not persuasive because Sourani teaches allocation of

bandwidth for a bus (bearer 27, FIG. 5A and 5B) and because a bus is considered as

transmission memory. Since the claims only recite memory bandwidth, they do not

preclude transmission memory bandwidth.   Although the claims are interpreted in light

of the specification, limitations from the specification are not read into the claims. See

In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The argument is further not persuasive because Sourani teaches allocation of

bandwidth for telecommunication switches, routers [col. 3, lines 5-7], each of a plurality

of channels comprising a receiver and a transmitter [col. 4, lines 25-26], FAX

transmission [col. 3, lines 21-22] and various types of network known in the art [col. 2,

lines 17-21], hence one or more of the switches, the routers, the receiver, the

transmitter and the FAX in various types of network known in the art inherently including

a storage memory.

21.   With respect to Alferness, applicant argued that a virtual channel is different than

a data type. The argument is misplaced because the examiner considers data going

through one virtual channel being data of a type that is associated only with the one

virtual channel (a first data type), and data going through another virtual channel being

data of a type that is associated only with the another virtual channel (a data type

different than the first data type).

Conclusion

22.   It is noted that applicant did not traverse the well-known statements made in the

prior office action. The well-known statements are therefore taken to be admitted prior

art. See *Chevenard*, 139 F.2d at 713, 60 USPQ at 241.

23.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

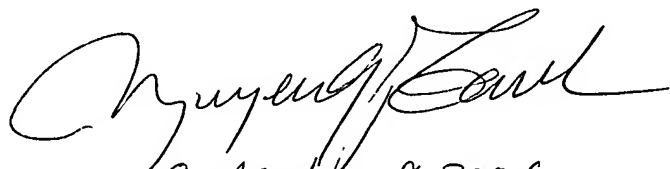than SIX MONTHS from the mailing date of this final action.

24.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tanh Q. Nguyen whose telephone number is 571-272-

4154. The examiner can normally be reached on M-F 9:30AM-7:00PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 8, 2006

TQN
September 8, 2006